

04-18-03

AF/2800



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EXAMINING GROUP #2833
ATTORNEY DOCKET NO:70140

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant : BIPPUS et al.
Serial No : 09/856,788
Filed : May 23, 2001
For : CROSSTALK SHIELDING...
Art Unit : 2833
Examiner : Truc T. Nguyen
Dated : April 17, 2003

Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

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APPEAL BRIEF

I. REAL PARTY IN INTEREST

This application is assigned to **Krone GmbH**.

II. RELATED APPEAL AND INTERFERENCES

Appellant, Appellant's legal representative, or assignee has no knowledge of any appeals or interferences which will directly effect or be directly effected by or have a bearing on the Boards decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 12 - 17 and 25 stand rejected and are on appeal.

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IV. STATUS OF AMENDMENT AFTER FINAL REJECTION

The Advisory Action of February 10, 2003 indicates that the Amendment After Final of January 8, 2003 will be entered.

V. SUMMARY OF THE INVENTION

The present invention relates to a connection strip for electrical wires. When two sets of wires need to be connected, such as a set of wires coming into a building, with a set of wires distributed throughout the building, a connection strip is often used to connect these two different sets of wires. The present invention particularly applies to data or signal wires where the signal is carried over a pair of wires. In order to quickly and easily connect two wires, insulation-piercing terminal contact elements 10 are provided inside a connection strip 11, substitute specification page 6 lines 15 - 20. When wires are placed into the insulation-piercing terminal contact elements 10, the contact elements pierce the insulation and make electrical contact with the conductor of the wire.

The faster signals or data are sent over electrical wires, the higher the frequency of the electrical signals on the wire. The higher the frequency, the more the wires behave like radio antennas. The closer the wires are together, the more the signals from one wire are received by another wire. The act of one wire receiving signals from an adjacent wire, is often referred to as crosstalk, substitute specification page 2 lines 3 - 7. The amount of crosstalk depends on the shape of the electrical conductors, and their relative positions. If first and second wires of an electrical signal are spaced from a third wire transmitting in high frequency, the closest wire

will receive more interference than the farther wire. Most signals are sent over a pair of wires as a difference in the voltage on the wires. Since the closer wire receives more interference than the farther wire, it appears that an additional signal has been added to the pair of wires and is considered noise or crosstalk.

When the wires are arranged in the cable, the relative positions of the individual wires is varied so that two wires of a signal are on an average, equally spaced from other wires which may cause interference. This varying of the position of the wires works very well in the cables to eliminate crosstalk. However this approach cannot be used in connector strips, and correspondingly connector strips make a significant contribution to the crosstalk problem.

The present invention tries to prevent two signal wires in a connection strip from being affected by adjacent wires. The present invention accomplishes this by using shielding plates 2 which are inserted between pairs of insulation-piercing terminal contact elements 10 in a connection strip 11, substitute specification page 7 lines 11 - 14, and as shown in Fig. 6. The shielding plates 2 need to be arranged between the pair of signal wires, and the adjacent wires. In particular the shielding plates 2 must block any direct line between the two signal pairs and the adjacent wires.

Therefore the present invention has formed the shielding plates as flat sheets in areas where there would be a direct line between the signal wires of one pair, and the adjacent wires. In the embodiment of Fig 6, the shielding plates 2 are arranged in a vertical plane that extends into and out of the drawing sheet. Appellant has found that the shielding plates 2 are especially effective if they are all electrically connected to each other. Appellant has also found that the

shielding plates 2 do not especially need to be grounded in order to be effective at reducing crosstalk, substitute specification page 8 lines 6 and 7. Appellant has found that a connection strip 11 is very effective, if the contact elements 10 are aligned in a row as shown in Fig. 6. Appellant has also found it especially beneficial to have the individual shielding plates 2 connected by a base rail 3 which extends in the plane of the drawing sheet. The shielding plates 2 and the base rail 3 are efficiently formed from a single piece of sheet metal as shown in present Fig. 4 which is preferably stamped into the shape shown in Fig. 4. The individual shielding plates 2 can then be twisted with respect to the base rail 3 by 90°. A connection web 4 is provided between the shielding plates 2 and the base rail 3 in order to provide a twistable connection between the shielding plates 2 and the base rail 3, substitute specification page 5 lines 17 - 19. The combination of the shielding plates 2, the connection webs 4 and the base rail 3 combine to form the shielding device 1 of the present invention. Appellant has found that such a shielding device 1 is very simple in design and economical to manufacture. Appellant has also found that such a shielding device 1 is very easy to insert into a connection strip to provide protection against crosstalk.

Claim 12 sets forth the connection strip with shielding plates and base rails connected to each other via a web which is rotated approximately 90°.

VI. CONCISE STATEMENT OF ALL ISSUES PRESENTED FOR REVIEW

Whether claims 12 - 17 and 25 are unpatentable under 35 USC § 103 over Petra et al. (EP 0,766,352 A2) in view of Simmack (DE 3,625,240 C2).

VII. GROUPING OF CLAIMS

Appellant asserts that each of claims 13, 14, 15, 17 and 25 are separately patentable.

Claims 12 and 16 stand and fall together.

VIII. ARGUMENT

Issue 1

Whether claims 12 - 17 and 25 are unpatentable under 35 USC § 103 over Petra et al. (EP 0,766,352 A2) in view of Simmack (DE 3,625,240 C2).

Appellant notes that Petra '352 is a European Patent Application published in German. No translation of this reference is presently available. However U.S. Patent 5,772,472 is related and has many features in common with Petra.

The rejection equates elements 24 of Petra with the shielding plates of the present invention. The rejection also equates the web of the present invention with element 32 of Petra. Appellant has reviewed Petra, and finds that element 32 of Petra is described as a contact pin, column 3 line 31 of '472. It appears that contact pins 32 are to separately and individually connect to a circuit board.

\b The rejection states that Simmack suggests a plurality of plates 7 extending from a base rail 6. Appellant has reviewed Simmack, and is unsure whether elements 7 of Simmack suggest a plate. Instead it appears that element 7 suggests a cross-leg (Querschenkeln). Appellant notes that the purpose of elements 7 in Simmack are to form electrical connections with elements 3. Appellant finds no teaching nor suggestion that elements 7 in Simmack do, or

could, form a shielding plate. Instead elements 6 and 7 in Simmack appear to form a bus bar which connects all of the wires coming in to the device of Simmack electrically together. Appellant notes that this is exactly opposite the function of the shielding plates and base rail of the present invention. The shielding plates and base rail of the present invention function to isolate wires from adjacent wires, while elements 6 and 7 of Simmack serve to electrically connect adjacent wires. Furthermore Appellant notes that elements 24 of Petra also appear to isolate adjacent wires from each other, and this is also in direct contrast to Simmack. Because of the completely opposite purpose of elements 24 in Petra, and elements 6, 7 of Simmack, it is Appellant's position that the combination of Petra and Simmack taken as a whole would not lead a person of ordinary skill in the art to combine both references to suggest the present invention.

12 The first basic requirement for obviousness is that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. The rejection states that it would have been obvious to make the shielding plates integrally extending from a base rail into Petra et al.'s shielding device as taught by Simmack for quick assembling process. Appellant acknowledges that the shielding device of the present invention in a connector strip provides many advantages, especially easy and rapid assembly. The present invention also lowers manufacturing cost by allowing the shielding plates, the connecting web and the base rail to all be formed in one operation. Appellant has reviewed the prior art, especially Petra and Simmack, and does not find either reference to suggest that these benefits

would occur if the references were combined. Therefore it is Appellant's position that the references themselves do not suggest or motivate one of ordinary skill to combine reference teachings.

The rejection indicates that combining the references would provide a benefit, but does not indicate where the suggestion of that benefit can be found in the prior art or the general knowledge. The Examiner indicates in the Advisory Action that there is no requirement that a motivation to make the modification be expressly articulated, and that the test for combining references is what the combination of disclosure taken as a whole would suggest to one of ordinary skill in the art. However the rejection still does not indicate where the suggestion or motivation to combine references, even if not expressly articulated, can be found in the prior art. Without a direct, or indirect suggestion in the prior art or general knowledge, the first basic criteria for obviousness is not met. Since Appellant has not found a suggestion or motivation in the prior art or general knowledge, and the rejection does not indicate wherein the prior art the suggestion or motivation can be found, either directly or indirectly, claim 12 cannot be considered obvious in view of the prior art. If the Examiner is relying on the knowledge generally available to one of ordinary skill in the art, Appellant respectfully requests support.

? (If the suggestion or motivation to combine is based on facts within the person knowledge of the Examiner, Appellant respectfully requests that the facts be supported by an Affidavit from the Examiner.

Appellant acknowledges that the expectation of some advantage is the strongest rational for combining references. However the recognition of the advantages must be expressly or

implicitly in the prior art are drawn from a convincing line of reasoning based on established scientific principles or legal precedent, that some advantage or expected beneficial result would have been produced by their combination. *In Re Sernaker*, 702 F.2d 989,994-95,217 USPQ 1,5-6 (Fed. Cir. 1983). Since the prior art does not recognize, either expressly or implicitly that making the shielding plates integrally extending from a base rail into Petra's shielding device as taught by Simmack for a quick assembling process, there is no expectation of some advantage in the prior art. Instead it appears that it is only Appellant's present application that provides any indication of advantage for the structure of the present invention. Since the advantage cannot be found in the prior art, claim 12 cannot be considered obvious in the prior art.

Appellant notes that even if elements 6 and 7 of Petra have a similar appearance to the base rail and shielding plates of claim 12, the mere visual similarity is not a suggestion or motivation to combine. Instead there must be some teaching nor suggestion either in the prior art, or the knowledge generally available, which would lead a person of ordinary skill in the art to combine references. As Appellant has noted previously, element 7 of Simmack is not intended to be a shielding plate, but instead is intended to form an electrical connection with electrical wires. Also elements 6 and 7 of Simmack are not intended to isolate wires from adjacent wires, but instead are intended for the exact opposite, to electrically connect adjacent wires. It is Appellant's position that since element 7 in Simmack has no shielding function, it would not be obvious to substitute elements 7 of Simmack for elements 24 in Petra. It is only the present application which has discovered the advantages of the present invention.

Appellant notes that even if there are similar appearances, it is only because of the present application that any similar appearance has been noted. Without the present application, it would take inventive skill to recognize any similar appearance and suggest a combining of references.

Appellant notes that elements 6 and 7 of Simmack electrically connect terminals 4 of Simmack. If there is any teaching or suggestion to combine, a person of ordinary skill might be led to use elements 6 and 7 of Simmack as a bus bar to electrically connect elements 28 of Petra which appear to connect to incoming and outgoing wires. Elements 6 and 7 in Simmack are described as converting a terminal block into a bus bar where all the input and output wires are connected together. Therefore any suggestion or motivation the prior art provides is to convert the terminal block of Petra into a bus bar.

While both Petra and Simmack may relate to terminal blocks, they both relate to different aspects of terminal blocks. In particular Petra relates to a terminal block for high transmission rates with shield plates 24, and Simmack relates to a device for converting a terminal block into a bus bar for commonly connecting all input and output wires. Since the goal of Simmack is to connect all input and output wires, a person of ordinary skill in the art would not be led to Petra which is trying to shield crosstalk between adjacent wires. The two references actually lead in opposite directions, since Petra desires to isolate adjacent wires, and Simmack desires to connect all the wires. Simmack provides no suggestion or motivation to connect shielding plates in a high transmission rate terminal block in order to prevent crosstalk. Furthermore, Appellant finds no indication in Petra that connecting all of elements 24 with a

base rail would be desirable, or that a quick assembly process is desired.

For all of the above reasons, the Board is respectfully requested to overrule the Examiner with regard to claim 12.

Claim 13 sets forth that the shielding plates are spaced from the insulation-piercing terminal contact elements. Appellant notes that plates 7 of Simmack are indicated as being in contact, especially electrical contact, with terminals 4. Therefore Simmack leads a person away from spacing elements 7 away from terminal contact elements, and especially away from using element 7 as shielding plates.

Claim 14 sets forth that the shielding plates are electrically insulated from the insulation piercing terminal contact elements. Simmack clearly teaches the exact opposite by showing that elements 7 are to be electrically connected to terminals 4. Therefore the relationship between the shielding plates and the contact elements in claim 14 is in direct contrast to the relationship between elements 7 and 4 of Simmack. Furthermore, the relationship between elements 24 and 10 in Petra is completely different from the relationship between elements 7 and 4 of Simmack. Therefore Simmack cannot teach the relationship as set forth in claim 14, and claim 14 further defines over the prior art.

Claim 15 sets forth that the web includes a substantially 90° twist and that the shielding plates and base rail are substantially flat. Appellant notes that element 32 of Petra does not have a substantially 90° twist. Further Appellant finds no incentive in the prior art to modify Petra to have element 32 have a substantially 90° twist. Appellant notes that any 90° twist in Simmack is not for connecting a base rail to a shielding plate, especially a shielding plate which


needs to block a direct line between adjacent wires. Instead any 90° twist in Simmack is for a completely different purpose and therefore claim 15 further defines over the prior art.

Claim 17 sets forth that one end of each of the webs is connected to the base rail and is substantially parallel to the base rail. Claim 17 also sets forth that another end of each of the webs is connected to the shielding plate and is substantially parallel with the plane of the shielding plate. Appellant notes that the reference of Simmack does not describe a web which has one end connected to a shielding plate, and especially where that end would be substantially parallel to a shielding plate. Furthermore, Appellant finds no teaching nor suggestion in Petra that element 2 be connected to a base rail and be substantially parallel with a base rail plane. Without any indication in the prior art of the desirability for modifying any web in Petra or Simmack, in order to suggest the features of claim 17, claim 17 cannot be obvious in view of the prior art. Claim 17 therefore further defines over the prior art.

Claim 25 sets forth that the insulation piercing terminal contact elements are arranged on the first side of the housing and extend toward a middle of the housing. The base rail is set forth as being arranged on the second side of the housing, substantially diametrically opposite the first side of the housing. In the embodiment of Fig. 6, the first side of the housing is the top of Fig. 6, and the second side of the housing is the bottom. Claim 25 then sets forth that the shielding plates extend from the base rail toward the middle of the housing. Appellant notes that it appears from Simmack that elements 6 and 7 are arranged on the same side of a housing as terminals 4. Therefore the arrangement of elements 4, 6 and 7 of Simmack lead away from the embodiment of claim 25.

For all of the above reasons, the Board is respectfully requested to overrule the Examiner and to allow each of claims 13 - 17 and 25.

Respectfully submitted
For Appellant,

By: 
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70140.17

Enclosed: Appendix
Duplicate copies of Appeal Brief
Request to Charge Deposit Account

DATED: April 17, 2003
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BY:  DATE: April 17, 2003

APPENDIX

12. A connection strip, comprising:
a plastic housing;
insulation-piercing terminal contact elements arranged in said plastic housing;
shielding plates arranged between said insulation-piercing terminal contact elements; and
at least one base rail connected to said shielding plates, said shielding plates and said base rail being integrally formed from a metal sheet with each shielding plate being connected to said base rail via a web and being arranged rotated approximately 90° with respect to said base rail.

13. A connection strip in accordance with claim 12, wherein:
said shielding plates are spaced from said insulation-piercing terminal contact elements.

14. A connection strip in accordance with claim 12, wherein:
said shielding plates are electrically insulated from said insulation-piercing terminal contact elements.

15. A connection strip in accordance with claim 12, wherein:
said web includes a substantially 90 degree twist;
said shielding plates and said base rail are substantially flat.

16. A connection strip in accordance with claim 12, wherein:
a width of said web is narrower than a width of said shielding plates.

17. A connection strip in accordance with claim 12, wherein:
one end of each of said webs is connected to said base rail and is substantially parallel with said base rail plane;
another end of each of said webs is connected to said shielding plate and is substantially parallel with said plane of said shielding plate.

25. A connection strip in accordance with claim 12, wherein:
said insulation-piercing terminal contact elements are arranged on a first side of said housing and extend toward a middle of said housing;
said base rail is arranged on a second side of said housing substantially diametrically opposite said first side of said housing;
said shielding plates extend from said base rail toward said middle of said housing.